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EXAMINER

MA, JOHNNY

ART UNIT	PAPER NUMBER
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2614

DATE MAILED: 06/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/750,346

Applicant(s)

JUNG, BYUNG DAL

Examiner

Johnny Ma

Art Unit

2614

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7, 9, 10 and 12-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9, 10 and 12-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-7, 9-10, and 12-17 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 9, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Giammaressi (US 2003/0061619 A1) in further view of Guedalia (US 6,536,043 B1).

As to claim 1, note the Giammaressi reference that discloses a service rate change method and apparatus. The claimed "clients for requesting information to the virtual server and receiving the requested information corresponding to the request from the virtual server via a first network" is met by video session manager receiving a programming request from the subscriber and providing the requested programming according to available bandwidth resources (Giammaressi [0031-0034]) and transport subsystem 104 as illustrated in Figure 1, wherein commands are sent from subscriber equipment to video session manager coupled to an information server (Giammaressi [0028-0029], also see Figure 1). The claimed "a server for providing the information requested by the clients to the virtual server via a second network" is met by video session manager coupled to information server via data path 116 (Giammaressi [0017]) wherein "...video system manager 122 (or session manager) is a system providing

Art Unit: 2614

communications between the provider equipment 102 (e.g., a cable system head end) and one or more set top terminals” (Giammaressi [0016]). The claimed “the virtual server for receiving the provided information from the server via the second network” is met by “[t]he information server 108 provides data streams on data path 116 and a synchronization clock on path 118 in response to requests for information from the video session manager on path 120” (Giammaressi [0017]). The claimed “[virtual server] storing the received information in a main memory” is met by “[t]he video session manager contains a transport processor 122-TP for packetizing the information provided by the information server via data path 116” (Giammaressi [0024]) wherein it is inherent that the video session manager [virtual server] temporarily store the information (“main memory”) in order to forward the information to the respective set top terminals.

The claimed “[virtual server] controlling traffic of the first network by using a protocol controlling the traffic of the first network” is met by “[t]he session manger 122 also manages the server content streams transmitted to the one or more set top terminals” (Giammaressi [0016]). The claimed “[virtual server] transmitting the stored information to the clients via the first network on a real time basis” is met by “the video session manager 122 is coupled to subscriber equipment 106 via a forward information channel 132, a forward command channel 133 and a back channel 134. All three of these channels are supported by the transport subsystem 104...[t]he output of the digital video modulator 122-DVM is coupled to the forward information channel of the transport subsystem 104” (Giammaressi [0023-0024]) wherein transmission is in real time (Giammaressi [0029,0033-0036]). The claimed “the virtual server being connected with the clients via the first network to receive requests for information from the

Art Unit: 2614

clients” is met by “[i]n addition, the set top terminal 136 accepts command from a remote control input device 138 or other input device. These commands are formatted, compressed, modulated, and transmitted through the network 104 to the video session manager 122. Typically, this transmission is accomplished through the back channel 134” (Giammaressi [0029]).

The claimed “and transmit the requests for information to the server and being connected with the server via the second network to receive the information provided from the server” is met by video session manager coupled to information server via data path 116 (Giammaressi [0017])

wherein “...video system manager 122 (or session manager) is a system providing communications between the provider equipment 102 (e.g., a cable system head end) and one or ore set top terminals” (Giammaressi [0016]). The claimed “wherein the virtual server comprises: the main memory for storing the information received from the server and outputting the information to be transmitted to a first requesting client” is met by “[t]he video session manager contains a transport processor 122-TP for packetizing the information provided by the information server via data path 116. The video session manager also contains a digital video modulator (DVM) 122-DVM...The output of the digital video modulator 122-DVM is coupled to the forward information channel of the transport subsystem 104” (Giammaressi [0024])

wherein it is inherent that the video session manager [virtual server] temporarily store the information (“main memory”) in order to forward the information to the respective set top terminals. However, the Giammaressi reference is silent as to the use of an auxiliary memory. Now note the Guedalia reference that discloses method and systems for scalable representation of multimedia data for progressive asynchronous transmission. The claimed “the auxiliary memory for storing the information outputted from the main memory to the first requesting client

Art Unit: 2614

and outputting the information to be transmitted to a second or later requesting client” is met by “[p]roxies are large storage devices, located as hubs within networks, used as large caches for data being delivered from serves to clients... As data is streamed from servers to clients or from broadcasting stations upon request, the proxy or MCU stores the data in a central hub so that it is available for delivery at a high bandwidth if requested again by any of the clients connected to the hub (Guedalia 24:59-25:3). The claimed “and at the same time, storing the information to be transmitted to the clients in an auxiliary memory” is met by the retrieval of requested multimedia data from servers, delivering the multimedia data to the client, and caching the multimedia data in hub (Guedalia 33:1-49). Therefore, the examiner submits that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Giammaressi video session manager with main memory (as discussed above) with the Guedalia auxiliary memory for the purpose of allowing the video session manager to have readily accessible multimedia data for transmission to a user such as for popular programming, so that a server request need not be made for each user request for such popular programming. The claimed “wherein when information previously requested by a first one of the clients is stored in the auxiliary memory, the virtual server transmits the stored information from the auxiliary memory to a second or later one of the clients when the second or later client requests the same information, in order to reduce a load of the server” is met by the Giammaressi and Guedalia combination as discussed above wherein “[p]roxies are large storage devices, located as hubs within networks, used as large caches for data being delivered from serves to clients... As data is streamed from servers to clients or from broadcasting stations upon request, the proxy or MCU stores the data in a central hub so that it is available for delivery at a high bandwidth if requested

Art Unit: 2614

again by any of the clients connected to the hub (Guedalia 24:59-25:3), wherein server load is reduced since information stored in auxiliary memory eliminates the need to request the information from the server. The claimed “a controller for controlling the main memory and the auxiliary memory and transmitting the information between the main memory and the auxiliary memory” is met by the Giammaressi and Guedalia combination as discussed above, note the video session manager comprises a central processing unit 124 (controller) and associated memory 126 (Giammaressi [0016]), wherein transmitted data is stored in main memory and cached in auxiliary memory, as discussed above.

As to claim 9, please see rejection of claim 1 wherein the claimed first and second interface unit are inherent to the connecting of the devices between the above discussed networks.

As to claim 16, the claimed “wherein the virtual server buffers a slot transfer scheduling” is met by “[t]he video session manager contains a transport processor 122-TP for packetizing the information provided by the information server via data path 116. The video session manger also contains a digital video modulator (DVM) 122-DVM for modulating the server data streams onto one or more carrier frequencies that are compatible with the transmission requirements of the network 104. The output of the digital video modulator 122-DVM is coupled to the forward information channel of the transport subsystem 104” (Giammaressi [0024]) wherein the “main memory” as discussed in the rejection of claim 1 serves to buffer the data to be transmitted. The claimed “and a slot in the main memory and the auxiliary memory to control the traffic” is met by the Giammaressi and Guedalia combination as discussed in the rejection of claim 1 wherein the session manager manages traffic (Giammaressi [0016]) and the main memory and auxiliary

Art Unit: 2614

memory serve to buffer the data to be transmitted. The claimed “so that the slot is transmitted from the server to the client within a time obtained by adding a first time taken for transmitting a data from the server to the virtual server and a second time taken for transmitting the data from the virtual server to the clients” is met by the transmission of data from the server to the virtual server and then to the client, as discussed in the rejection of claim 1, wherein it is inherent that the slot be transmitted from the server to the client within the sum of the time taken for transmitting a data from the server to the virtual server and a second time taken for transmitting the data from the virtual server to the clients in order for the client to display requested programming without interruption.

4. Claims 2-4, 10, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Giammaressi (US 2003/0061619 A1) in further view of Guedalia (US 6,536,043 B1) and Ito et al. (US 6,014,693).

As to claim 2, the claimed “a first data base for storing a full size of information” is met by data storage unit storing appropriate bandwidth programs (paragraph [0021]). The claimed “a second data base for storing a critical part” is met by the storage unit storing minimal bandwidth programs. However, the Giammaressi reference is silent as to the process for creating a minimal bandwidth program. Now note the Ito et al. reference that discloses a system for delivering compressed stored video data by adjusting the transfer bit rate to compensate for high network load. The claimed “extracted from the full size of the information stored in the first data base” is met by the Ito et al. video data assembler that extracts data from the original video data to create a lower bit-rate version of the video program (column 3, lines 12-20). Therefore, the examiner submits that it would have been obvious to one of ordinary skill in the art at the time the

Art Unit: 2614

invention was made to modify (if necessary) the Giammaressi minimal bandwidth program with the Ito et al. process for creating a lower bit-rate version of a video program for the purpose of providing a means for creating a minimal bandwidth program using data that is readily available, the appropriate bandwidth program.

As to claim 3, the claimed “wherein the virtual server transmits the full size of information to the clients or the critical part extracted from the server to the clients” is met by the transmission of an appropriate bandwidth program or minimal bandwidth program according to bandwidth resources (paragraphs [0033-0036]).

As to claim 4, the claimed “wherein the information stored in the first data base includes a multimedia of an MPEG form” is met by the use of MPEG encoding (paragraph [0014]).

As to claim 10, please see rejection of claim 2.

As to claim 13, the claimed “wherein, under the control of the controller, the auxiliary memory stores the full size of information outputted from the main memory, or receives and stores the critical part extracted from the full size of information, and transmits the stored critical part to the clients” is met by that discussed in claims 1 and 2 wherein data storage unit storing appropriate bandwidth programs (paragraph [0021]). and the storage unit storing minimal bandwidth programs and the transmission of minimum bandwidth programs (Giammaressi [0035]).

5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Giammaressi (US 2003/0061619 A1) in further view of Guedalia (US 6,536,043 B1), Ito et al. (US 6,014,693), and Nagashima et al. (US 6,434,746 B1).

Art Unit: 2614

As to claim 5, note the Giammaressi reference discloses minimal bandwidth programs that have been encoded utilizing a bit budget representing a minimal level in terms of visual or aural encoding quality (paragraph [0021]). However, the Giammaressi reference is silent as to the specific means for performing such a conversion. Now note the Nagashima et al. reference that discloses an accounting in an image transmission system based on a transmission mode and an accounting mode based on the transmission mode. The claimed “wherein the critical part stored in the second data base includes a multimedia having a small number of ‘B’ pictures or having a small number of ‘B’ picture and ‘P’ picture” is met by “[i]f the available capacity is not sufficient for transmitting all the frames, the I- and P-frames alone are transmitted. If the available capacity is even lower, the I-frame alone is transmitted...” (column 8, lines 21-27). Therefore, the examiner submits that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify (if necessary) the Giammaressi minimal bandwidth program with the Nagashima et al. transmission of a reduced number of B or P frames for the purpose providing a means of supplying continuous data to a viewer when bandwidth limitations do not allow for the transmission of a full bit-rate presentation.

6. Claims 6, 7, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Giammaressi (US 2003/0061619 A1) in further view of Guedalia (US 6,536,043 B1).

As to claim 6 and 7, note the Giammaressi reference discloses maximum data transfer rates between the networked various servers/components and network from video session manager to user stations (paragraphs [0021, 0025]). However, the Giammaressi reference does not specifically disclose reducing a data transfer rate difference. Nevertheless, the examiner gives Official Notice that it is notoriously well known in the art that communications between

Art Unit: 2614

data components in a head end occur at faster rates than that of the communication between a headend component and a client for the purpose of ensuring data is routed as quickly as possible for transmission to a user such as the buffering of data that is transmitted at a high rate and read from the buffer in real-time for subsequent transmission to a user to ensure uninterrupted viewing of a video signal. Therefore, the examiner submits that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Giammaressi data transfer rates accordingly for the above stated advantages.

As to claim 17, note the Giammaressi reference discloses “[t]he video session manager contains a transport processor 122-TP for packetizing the information provided by the information server via data path 116” (Giammaressi [0024]) and transmitting the information to the client (Giammaressi [0024-0025]). The Giammaressi reference also discloses the transmission of higher bandwidth programs and minimal bandwidth programs according to network bandwidth availability (Giammaressi [0020-0021]). However, the Giammaressi reference does not specifically disclose “wherein, when a third time taken for transmitting a slot of a predetermined size from the server to the client is greater than the sum of the first time and the second time, the virtual server fetches the data from the server and buffers it for the time difference of the third time and the sum of the first time and the second time.” Nevertheless, the examiner gives Official Notice that it is notoriously well known in the art to buffer information in advance, for at least the time when the information cannot be acquired and provided in time for timely usage, such as providing MPEG packets in time for uninterrupted display of MPEG video programming, for the purpose of providing the information in a manner that presentation will not be interrupted. Therefore, the examiner submits that it would have been obvious to one

Art Unit: 2614

of ordinary skill in the art at the time the invention was made to modify the Giammaressi transfer of video programming from an information server to a video session manager and the video session manager providing the video programming to subscriber equipment accordingly for the above stated advantages.

7. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Giammaressi (US 2003/0061619 A1) in further view of Guedalia (US 6,536,043 B1) and Ito et al. (US 6,014,693) and Aharoni et al. (US 6,014,694).

As to claim 12, the claimed “wherein, under the control of the controller, the main memory stores the full size of information being received from the first data base of the server and transmits the full size of information to the clients” is met by data storage unit storing appropriate bandwidth programs (paragraph [0021]) wherein main memory stores the full size of information and transmits it to clients and “and at the same time, outputs the full size of information to the auxiliary memory, as discussed in the rejection of claims 1 and 2.

However, the Giammaressi reference is silent as to the reproduction speed of the clients. Now note the Aharoni et al. reference that discloses a system for adaptive video/audio transport over a network. The claimed ““fitting a display speed of the clients”” is met by “...the system can adjust the video data to match the differences in available computing power on the client computer system” (column 2, lines 44-65). Therefore, the examiner submits that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify (if necessary) the Giammaressi scaled video according to network congestion with the Aharoni et al. adjusting of video according to client computing power for the purpose of allowing a greater

Art Unit: 2614

variety of devices to access the video distribution system resulting in larger viewing audience and increased revenue.

8. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Giammaressi (US 2003/0061619 A1) in further view of Guedalia (US 6,536,043 B1) and Aharoni et al. (US 6,014,694).

As to claim 14, note the Giammaressi reference discloses a service rate change method and apparatus to ensure continuous video reproduction at the client site in response to bandwidth resources. However, the Giammaressi reference is silent as to the reproduction speed of the clients. Now note the Aharoni et al. reference that discloses a system for adaptive video/audio transport over a network. The claimed "wherein the virtual server transmits the stored information to the clients according to a reproduction speed of the clietns" is met by "...the system can adjust the video data to match the differences in available computing power on the client computer system" (column 2, lines 44-65). Therefore, the examiner submits that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify (if necessary) the Giammaressi scaled video according to network congestion with the Aharoni et al. adjusting of video according to client computing power for the purpose of allowing a greater variety of devices to access the video distribution system resulting in larger viewing audience and increased revenue.

As to claim 15, note the Giammaressi reference discloses a service rate change method and apparatus to ensure continuous video reproduction at the client site in response to bandwidth resources, transmitting the information stored in the main memory to clients, and storing the information in the auxiliary memory, see rejection of claim 1. However, the Giammaressi

Art Unit: 2614

reference is silent as to the reproduction speed of the clients. Now note the Aharoni et al. reference that discloses a system for adaptive video/audio transport over a network. The claimed “fitting a display speed of the clients” is met by “...the system can adjust the video data to match the differences in available computing power on the client computer system” (column 2, lines 44-65). Therefore, the examiner submits that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify (if necessary) the Giammaressi scaled video according to network congestion with the Aharoni et al. adjusting of video according to client computing power for the purpose of allowing a greater variety of devices to access the video distribution system resulting in larger viewing audience and increased revenue.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The Ong reference (US 5,815,662) discloses predictive memory caching for media-on-demand systems.

The Belknap et al. reference (US 5,586,264) discloses a video optimized media streamer with cache management.

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after

Art Unit: 2614


the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Johnny Ma whose telephone number is (571) 272-7351. The examiner can normally be reached on 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller can be reached on (571) 272-7353. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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